

IN THE CLAIMS:

1- 44. (Cancelled)

45. (Currently Amended) A method to allocate a network resource ~~to a buyer agent operating on a buyer server~~, the method including employing a computer system configured by a resource agent program as a resource agent to:

~~receiving receive a first bid for the network resource data message from a computer system configured by a first agent program as a first buyer agent, the data message associating a bid with the network resource,~~

~~transmitting transmit a notification message regarding a second bid to the first buyer agent information regarding at least one other bid for the network resource, the at least one other, the second bid having been received from a computer system configured by a second agent program as a second buyer agent,~~

~~determining determine an auction-termination time in accordance to an allocation rule,~~

~~receiving receive an updated bid from the first buyer in response to the notification message, the updated bid having been received agent before expiration of the auction-termination time in at least some circumstances a data message that has been sent by the first buyer agent in response to the transmitted information and associates a new bid with the network resource, and~~

~~allocating allocate the network resource among said buyer agents in accordance with the bids and an the allocation rule,~~

~~wherein the bids submitted by the buyer agents are computed, independently of a user's input, in accordance with a valuation rule and/or a strategy rule received from the user, and~~

~~wherein the buyer agent programs are such that a computer different from the one configured as the first buyer agent can be configured as the second buyer agent.~~

46. (Cancelled).

47. (Previously presented) The method of claim 45, where the network resource includes at least one of: a bandwidth, a buffer space, and a processing time.

48. (Currently Amended) The method of claim 45, where:
the first buyer agent is associated with [a] the user, and [;]
the first buyer agent operates on a buyer server located remotely from a computer associated with the user.

49- 50. (Cancelled).

51. (Previously presented) The method of claim 45, where the bid is based on a truthful best reply strategy.

52. (Previously presented) The method of claim 45, where the bid is based on a measurement of the network resource.

53. (Cancelled).

54. (Previously presented) The method of claim 45, where the allocation rule includes one of: an English Auction allocation rule, a continuous bid-ask allocation rule, a progressive second price auction allocation rule, and a hold option allocation rule.

55. (Currently Amended) The method of claim 45, where allocating includes:
generating at least one command to a network device based on a resource control protocol for allocating the network resource.

56. (Previously presented) The method of claim 45, where allocating includes:
generating at least one command based on one of SNMP and COPS for allocating the network resource.

57. (Previously presented) The method of claim 45, where allocating includes: generating at least one command for at least one device for controlling the network resource.

58. (Currently Amended) The method of claim 45, further including: receiving a data message from a computer system configured by a seller agent program as a seller agent operating on a seller server, the data message associating [a] the network resource with an offer to sell.

59. (Currently Amended) The method of claim 45, further including: transmitting a notification data message to the first buyer agent, wherein the notification message is determined by using including data based on at least one of:
an available quantity of the network resource,
an allocation of the network resource,
a bid from the first buyer agent,
a bid from a different the second buyer agent, and
an offer to sell from a computer system configured by a seller agent program as a seller agent operating on a seller server.

60. (Currently Amended) The method of claim 45, further including: wherein transmitting a data the notification message transmitted to the first buyer agent indicates that the second bid affects an expected allocation of the network resource notifying the first buyer agent that a bid received from the first buyer agent is less than a bid received from a different buyer agent.

61. (Cancelled)

62. (Currently Amended) The method of claim 45, further including employing the resource agent to:

~~receiving receive~~ a data message ~~for reallocating an allocated network resource~~ from the first buyer agent ~~an allocated network resource to~~ with a different buyer agent, and

based on the data message, ~~reallocating~~ ~~reallocate~~ the allocated network resource to the different buyer agent.

63. (Currently Amended) The method of claim 45 further including employing the resource agent to store information in a memory space, wherein the stored information comprises at least one of:

- (i) an available quantity of [a] ~~the~~ network resource,
- (ii) an allocation of [a] ~~the~~ network resource,
- (iii) a bid from ~~a~~ the first buyer agent,
- (iv) ~~a bid from the second buyer agent, and~~
- ~~(iv) an offer to sell from a computer system configured by a seller agent program as a seller agent operating on a seller server.~~

64. (Currently Amended) A system to allocate a network resource ~~from a resource agent operating on a resource server~~, the system including:

- a ~~computer system buyer server~~, and
- a ~~first agent program for configuring the computer system into a first buyer agent operating on the buyer server, the first buyer agent that is~~ capable of:
 - i) generating a bid for the network resource,
 - ii) transmitting ~~the bid~~ a data message to the ~~a computer system configured by a resource agent program as a resource agent server, the data message associating a bid with the network resource,~~
 - iii) receiving ~~a notification message information regarding a second at least one other bid for the network resource, the at least one other second bid having been submitted by received from a computer system configured by a second agent program as a second buyer agent,~~
 - iv) transmitting ~~in some circumstances in~~ ~~an updated bid~~ in response to the second bid before the expiration of an auction-termination time ~~received information a data message that associates a new bid with the network resource, and~~

v) receiving an allocation of the network resource from the resource agent that has determined the allocation in accordance with the bids and an allocation rule,

wherein the bids submitted by the buyer agents are computed, independently of a user's input, in accordance with a valuation rule and/or a strategy rule received from the user, and

wherein the buyer agent programs are such that a computer different from the one configured as the first buyer agent can be configured as the second buyer agent.

65. (Currently Amended) The system of claim 64, where the first buyer agent is capable of generating [a] the bid for [a] the network resource including at least one of a bandwidth, a buffer space, and a processing time.

66. (Currently Amended) The system of claim 64, where the first buyer agent is capable of generating [a] the bid for [a] the network resource based on at least one of:

data received from [a] the user associated with the buyer agent,
a buyer allocation rule for determining an allocation of the network resource,
a buyer valuation rule for determining a value of the network resource, and
a buyer strategy rule for determining a bid for the network resource based on the buyer allocation rule and the buyer valuation rule.

67. (Cancelled)

68. (Currently Amended) A The method of claim 45 further comprising to allocate a network resource to at least one buyer agent operating on at least one buyer server, the method including:

receiving from the at least one buyer agent a corresponding data message, the corresponding data message associating a bid with the network resource, and

allocating the network resource among the at least one buyer agent in accordance with an allocation rule such that there is at least some combination of bids in respect of which the allocation rule divides the resource among more than one buyer agent.

69. (Previously Presented) The method of claim 68, where the network resource includes at least one of: a bandwidth, a buffer space, and a processing time.

70. (Previously Presented) The method of claim 68, where each corresponding bid is based on at least one of:

a buyer allocation rule for determining an allocation of a network resource,
a buyer valuation rule for determining a value of the network resource, and
a buyer strategy rule for determining a bid for a network resource in accordance with the buyer allocation rule and the buyer valuation rule.

71. (Previously Presented) The method of claim 68, where the allocation rule includes one of: an English Auction allocation rule, a continuous bid-ask allocation rule, a progressive second price auction allocation rule, and a hold option allocation rule.

72. (New) The method of claim 45, wherein the buyer agents are capable of being moved by the user from one computer system to another computer system.

73. (New) The method of claim 45, wherein the network resource is infinitely divisible.

74. (New) The method of claim 45, wherein the network resource is arbitrarily divisible.

75. (New) The method of claim 50, wherein the valuation rule is capable of determine a value for a quantity of the network resource, wherein the network resource is divided into an infinite number of quantities.

76. (New) A method for allocating a network resource comprising:
using a computer system configured by a first buyer agent program as a first buyer agent to:

(i) receive a valuation and a strategy rule from a user;

- (ii) compute a first bid independently of a user's input in accordance with the valuation rule and/or the strategy rule; and
 - (iii) transmit the first bid for the network resource;
- using a computer system configured by a second buyer agent program as a second buyer agent to transmit a second bid for the network resource,
- using a computer system configured by a resource agent program as a resource agent to:
- (i) transmit a notification message regarding the second bid to the first buyer agent, and
 - (ii) determine an auction-termination time in accordance to an allocation rule, using the first buyer agent to transmit an updated bid in response to the notification message, wherein the updated bid is received before expiration of the auction-termination time; and
- using the resource agent to allocate the network resource among the buyer agents in accordance with the bids and the allocation rule.